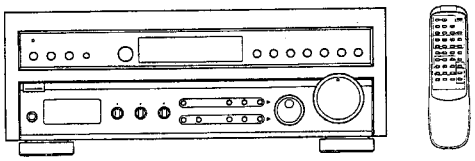
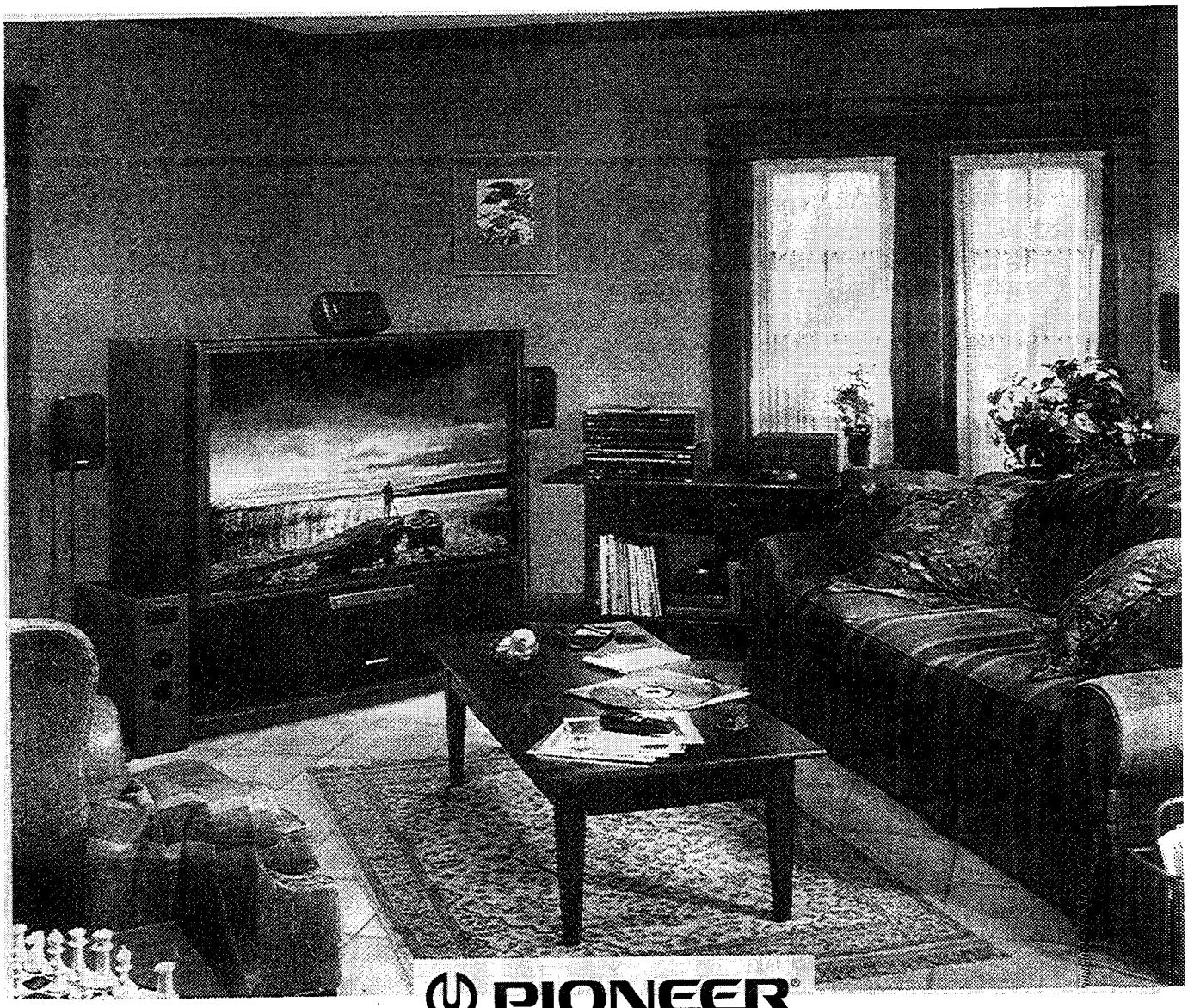
Operating Instructions

AUDIO/ VIDEO STEREO RECEIVER

VSX-456





PIONEER®

The Art of Entertainment

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However the method of connecting and operating the unit is the same.

IMPORTANT NOTICE

[For U.S. model]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure place. This is for your security.

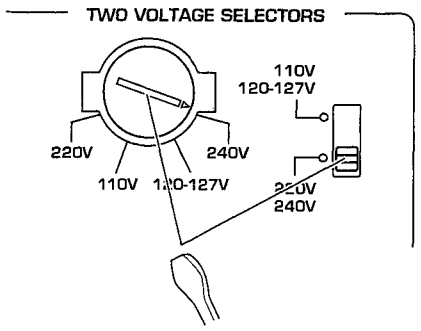
THE POWER SWITCH IS SECONDARY CONNECTED AND THEREFORE DOES NOT SEPARATE THE UNIT FROM MAINS POWER IN STANDBY POSITION.

TWO VOLTAGE SELECTOR SWITCHES

Only the multi-voltage model is provided with these switches. Mains voltages in Saudi Arabia are 127 V and 220 V only. Never use this model with the 110 V setting in Saudi Arabia.

The line voltage selector switches are on the rear panel. Check that they are set properly before plugging the power cord into the household wall socket. If the voltage is not properly set or if you move to an area here the voltage requirements differ, adjust the selector switches as follows.

1. Use a medium-sized screwdriver.
2. First, insert the screwdriver in the groove of the voltage selector at the left, and adjust so that the tip of the groove points to the voltage value of your area.
3. Next, insert the screwdriver in the groove of the voltage selector at the right and adjust until the voltage is the same as at the left.



Medium-sized screwdriver

U.S. model	NTSC
Multi-voltage model	PAL/NTSC

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

RETURN function

This function returns the unit to its initial settings with the tuner ready to receive a broadcast. This is helpful during troubleshooting or when no sound is output. For details, refer to page 25.

CHANNEL STEP SWITCH (Multi-voltage model only)

The unit has been factory preset to the channel allocation value for the area in which it is to be sold. If this value is set incorrectly, the tunes in frequency may be wrong, or sound may be distorted, resulting in an inability to reproduce reception signals at their proper sound quality. For this reason, be sure to confirm that the values are set correctly before first using the unit.

(FM 100 kHz/AM 10 kHz) position:

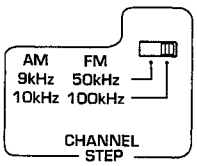
Set to this position for areas with an FM reception step of 100 kHz and AM 10 kHz.

(FM 50 kHz/AM 9 kHz) position:

Set to this position, for areas with an FM reception step of 50 kHz and AM 9 kHz.

NOTE:

When unsure about the channel allocation for your area, consult your dealer for correct information.



IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the product is operated.
RETAIN INSTRUCTIONS — The safety and operating instructions should be retained for future reference
HEED WARNINGS — All warnings on the product and in the operating instructions should be adhered to.
FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.
CLEANING — The product should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.
ATTACHMENTS — Do not use attachments not recommended by the product manufacturer as they may cause hazards.
WATER AND MOISTURE — Do not use this product near water — for example, near a bathtub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
ACCESSORIES — Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
CART — A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

VENTILATION — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
POWER SOURCES — This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
LOCATION – The appliance should be installed in a stable location
NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

GROUNDING OR POLARIZATION
- If this product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other), it will fit into the outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- If this product is equipped with a three-wire grounding type plug, a plug having a third (grounding) pin, it will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
OUTDOOR ANTENNA GROUNDING — If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode See Figure A.
LIGHTNING — For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
POWER LINES — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal
OVERLOADING — Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

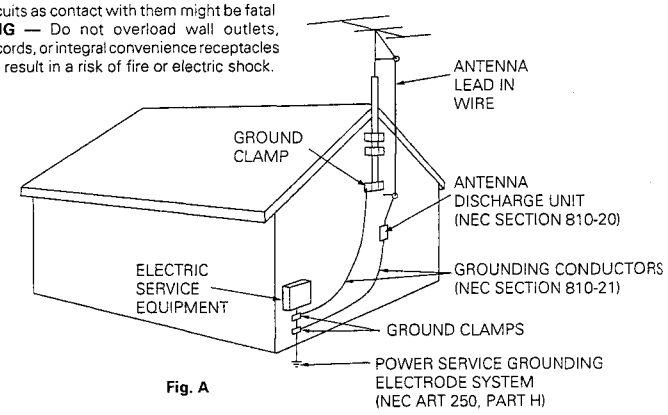

ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
GROUNDING CONDUCTORS (NEC SECTION 810-21)
ELECTRIC SERVICE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

Fig. A

NEC — NATIONAL ELECTRICAL CODE

OBJECT AND LIQUID ENTRY — Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
SERVICING — Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
DAMAGE REQUIRING SERVICE — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way
- When the product exhibits a distinct change in performance — this indicates a need for service.

REPLACEMENT PARTS — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
SAFETY CHECK — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
WALL OR CEILING MOUNTING — The product should not be mounted to a wall or ceiling
HEAT — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Information to User

Alteration or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

FEATURES

□ DOLBY PRO LOGIC COMPATIBLE

Best suited for playing back movies and music by reproducing surround effects.

□ 100 W 5 ch EQUAL POWER DISCRETE AMPLIFIER

5 ch equal power discrete amplifier which plays back the high quality effect of Dolby Pro Logic.

CONTENTS

1. BEFORE USE

CHECKING ACCESSORIES 7
REMOTE CONTROL UNIT 7
INSTALLATION 8

2. NAMES AND FUNCTIONS OF PARTS

NAMES OF PARTS 9
CONNECTING DEVICES 12

3. BASIC OPERATIONS

LISTENING TO FM/AM BROADCASTS 14
RECORDING 17
OPERATING OTHER COMPONENTS 19
CD PLAYER operation 19
LD PLAYER operation 19
DVD PLAYER operation 20
CASSETTE DECK operation 20
TV operation 21

□ 5-D THEATER

The 5-D THEATER function provides clear dynamic sound effects by outputting audio signals through the rear channel to simulate stereo sound.

□ TWO SFC MODES

Reproduces 2 surround effects-STUDIO and ARENA.

4. VARIOUS OPERATIONS

ENJOYING SURROUND EFFECTS 22
RETURNING TO BROADCAST RECEPTION MODE (RETURN BUTTON) 25

5. OTHER

SURROUND 26
TROUBLESHOOTING 27
SPECIFICATIONS 28

READING THIS MANUAL

■ Meaning of Marks

Provides detailed precautions and advice on operations, etc.

Indicates that displays are blinking.

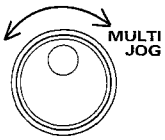
Indicates that displays are lit.

■ Meaning of Illustrations

The following describes illustrations on pressing buttons.

ENTER

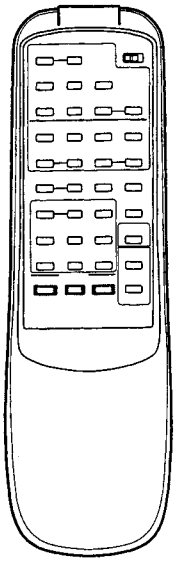
Means to press the ENTER button.



Means to rotate (adjust) the MULTI JOG.

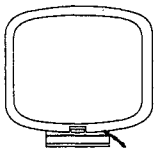
1. BEFORE USE

CHECKING ACCESSORIES

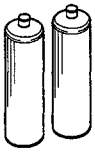


Remote control unit

FM antenna



AM loop antenna

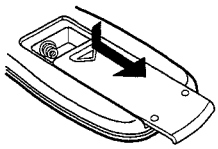


Dry cell battery
(size "AA" IEC R6) × 2

REMOTE CONTROL UNIT

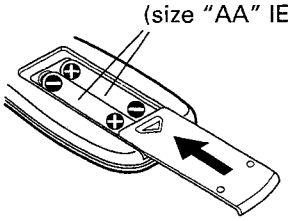
Loading Remote Control Batteries

1.



Dry cell battery
(size "AA" IEC R6) × 2

2.

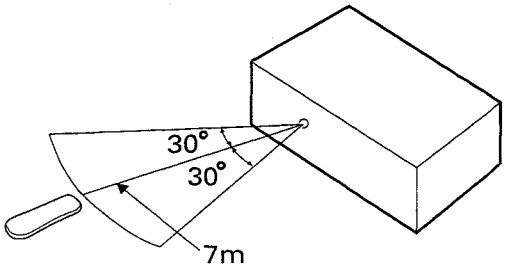


CAUTIONS

Incorrect use of batteries may result in such hazards as leakage and bursting. Observe the following precautions.

- Never use new and old batteries together.
- Insert the plus and minus sides of the batteries properly according to the marks in the battery case.
- Batteries with the same shape may have different voltages. Do not use different batteries together.

Operating Range of Remote Control Unit

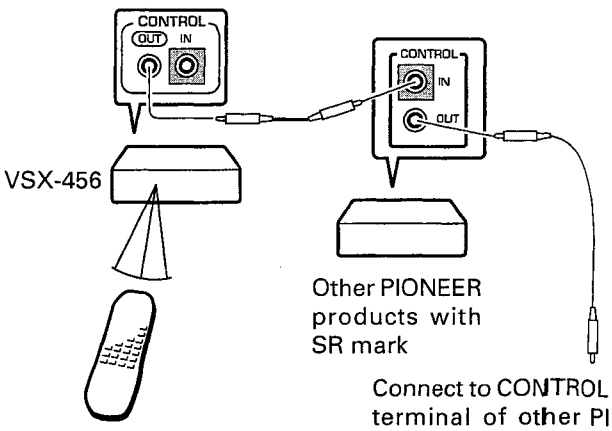


memo

- The remote control unit may not work if there are obstacles between the remote control unit and this unit, and if the remote control unit is not directed towards the remote sensor of the main unit at the correct angle.
- The remote control unit may not work properly if strong light such as direct sunlight and fluorescent light is shining onto the main unit's remote sensor.
- The remote control unit may not work properly when this unit is used near devices emitting infrared rays, or when remote control units of other devices which use infrared rays are used.
  On the other hand, the use of this remote control unit may cause other devices to work improperly.
- When the operating range of this remote control unit becomes too short, replace the batteries.

Operating the Remote Control Unit

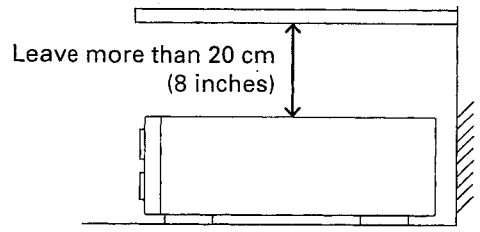
By connecting the control cord (optional), other PIONEER products can be operated using this remote control unit via this unit. Direct the remote control unit towards the remote sensor of this unit.
The remote control signals are received by the remote sensor of this unit, and sent to the other devices via the CONTROL OUT terminal.



INSTALLATION

Installing this Unit

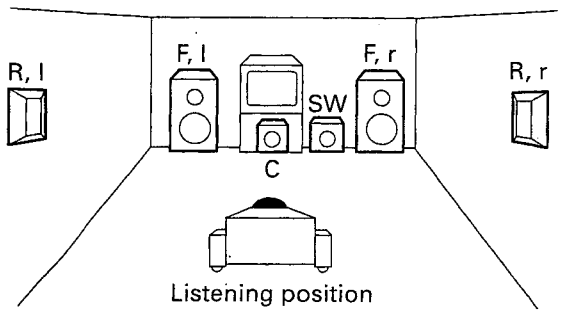
- Do not place objects on top of this unit so that radiated heat can be properly dispersed.
- When installing in racks, etc., leave more than 20 cm of space at the top.



Installing Speakers

To achieve the best surround effects, install speakers as shown in the following figure.

Installation Example



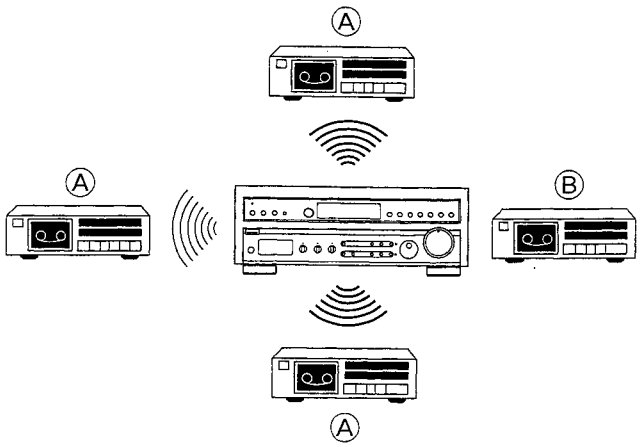
In the above figure, F indicates front speakers, R indicates rear speakers, C indicates center speakers, SW indicates sub woofer, r indicates right, and l indicates left.

memo

- If installing the rear speakers far away from the front and center speakers, surround effects cannot be fully achieved.
- Installing speakers near the TV may cause interference such as the TV color to change. In such cases, use magnetically shielded speakers or install the speakers away from the TV.
- Install the left and right speakers at equal distance from the TV.
- Install the center speaker at the top, bottom, or behind the TV so that TV sound and images match.
- It is recommended to install the rear speakers slightly above ear level.

Installing the Cassette Deck

Installing the cassette deck in the following (A) positions in the figure may affect playback. It is recommended that it be installed in the (B) position.

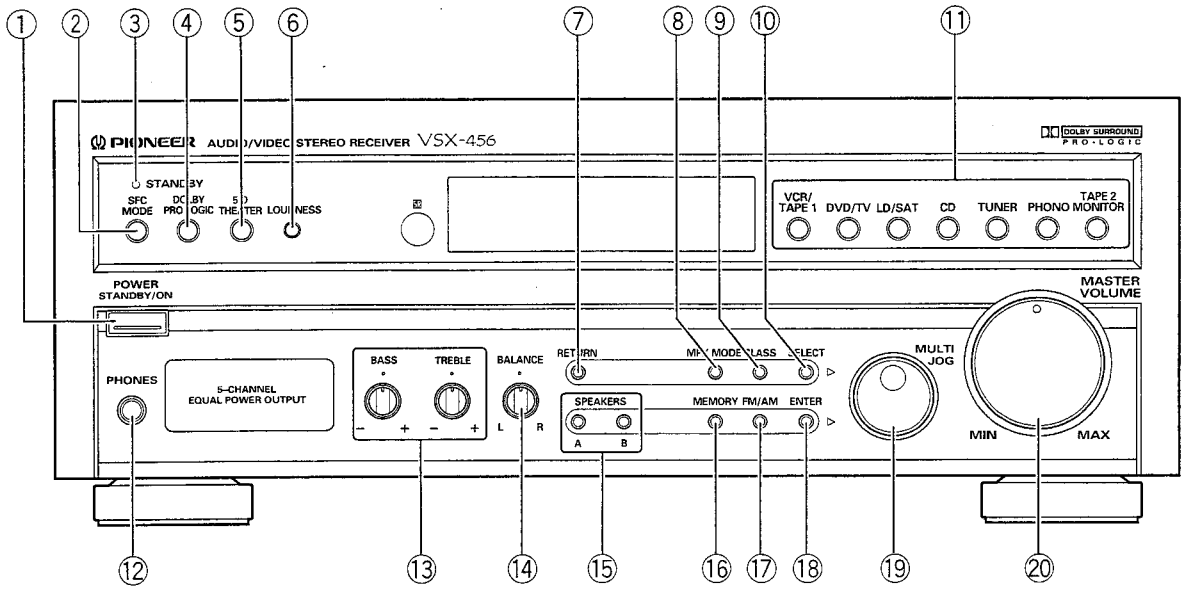


2. NAMES AND FUNCTIONS OF PARTS

NAMES OF PARTS

Front Panel

- The size of characters in the figure may different from that on the actual product.



① **POWER STANDBY/ON button**

② **SFC MODE button (P.22)**

③ **STANDBY indicator**

④ **DOLBY PRO-LOGIC button (P.23)**

⑤ **5-D THEATER button (P.24)**

⑥ **LOUDNESS button**
Press this button when the volume is low to raise the low and high range levels so that the sound can be heard more easily.

⑦ **RETURN button (P.25)**

⑧ **MPX MODE button**
Use to switch the auto stereo/monaural mode for receiving FM broadcasts.
When the received broadcast signal is weak, press this button to set the monaural mode.

⑨ **CLASS button (P.15)**

⑩ **SELECT button (P.14)**
Use to switch the control of the MULTI JOG between station mode and frequency mode when operating the tuner.

⑪ **Function buttons (from P.14)**

⑫ **PHONES jack (Headphone terminal)**

⑬ **TONE control**
Use to adjust tone.

⑭ **BALANCE control**
Use to adjust volume balance.

⑮ **SPEAKERS A, B buttons**
ON/OFF switches for the A and B speaker systems.

⑯ **MEMORY button (P.15)**

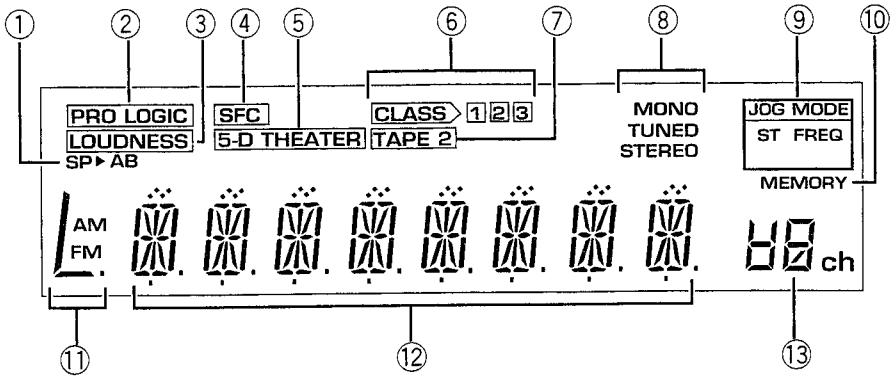
⑰ **FM/AM button (P.14)**
Use to switch the FM/AM frequency band reception.

⑱ **ENTER button (P.15)**

⑲ **MULTI JOG (from P.14)**
Use to select the frequency and station number when operating the tuner.

⑳ **MASTER VOLUME**

Display



① Speakers A, B indicator
The indicator of the speaker system (A, B) selected will light.

② PRO LOGIC indicator
Lights when Dolby Pro Logic is selected.

③ LOUDNESS indicator
Lights when LOUDNESS is ON.

④ SFC indicator
Lights when STUDIO or ARENA has been selected with the SFC MODE button.

⑤ 5-D THEATER indicator
Lights when 5-D THEATER is ON.

⑥ CLASS 1, 2, 3 indicators
The indicator of the class number selected lights.

⑦ TAPE 2 indicator
Lights when TAPE 2 MONITOR is ON.

⑧ TUNER indicator
MONO:
Lights when the monaural mode is set using the MPX MODE button.
TUNED:
Lights when broadcasts are being received.
STEREO:
Lights when stereo broadcasts are received during auto stereo mode.

⑨ JOG MODE indicator
ST:
Lights when the station mode is selected.
FREQ:
Lights when the frequency mode is selected.

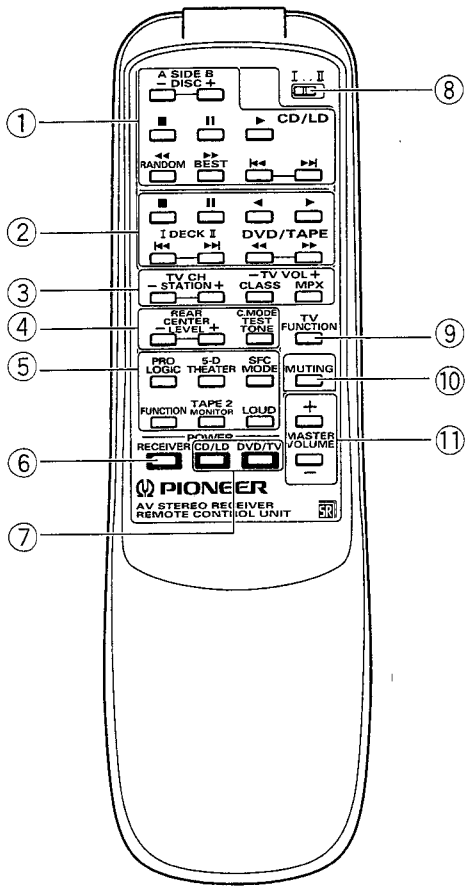
⑩ MEMORY indicator
Lights when station memory mode is selected.

⑪ AM/FM indicators
The indicator of the band currently selected (AM/FM) lights.

⑫ CHARACTER display

⑬ STATION display
Indicates the station number currently selected.

REMOTE CONTROL UNIT



① CD/LD buttons

(When the MODE switch is set to I.)
Sets CD.
DISC –/+, ■, II, ►, RANDOM, BEST, |◄◄, ►►|
(When the MODE switch is set to II.)
Sets LD.
SIDE A/B, ■, II, ►, ◄◄, ►►, |◄◄, ►►|

② DVD/TAPE buttons

(When the MODE switch is set to I.)
Sets DVD.
■, II, ►, |◄◄, ►►|, ◄◄, ►►
(When the MODE switch is set to II.)
Sets TAPE DECK.
■, II, ◄, ►, DECK I/II, ◄◄, ►►

③ TV/TUNER buttons

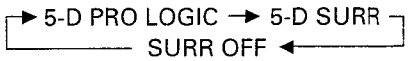
(When the MODE switch is set to I.)
Sets AM/FM tuner.
STATION –/+, CLASS, MPX
(When the MODE switch is set to II.)
Sets TV.
TV CH (channel) –/+, TV VOL (volume) –/+

④ SURROUND ADJUSTMENT buttons

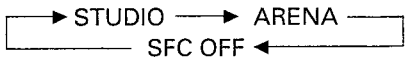
(When the MODE switch is set to I.)
CENTER LEVEL –/+
Adjusts the center level.
TEST TONE
When SFC MODE or DOLBY PRO LOGIC is ON, volume balance adjustment signals are output in order from each speaker and center/rear level can be adjusted.
(When the MODE switch is set to II.)
REAR LEVEL –/+
Adjusts the rear level.
C.MODE
Switches the center mode.

⑤ RECEIVER buttons

PRO LOGIC
Use to turn ON/OFF DOLBY PRO LOGIC surround.
5-D THEATER
Use to select from 2 types of 5-D THEATER.



SFC MODE
Use to select from 2 types of SFC MODE.



FUNCTION
Use to switch the function.
TAPE 2 MONITOR
Use to turn ON the TAPE 2 MONITOR.
LOUD. (LOUDNESS)
When turned ON in low volume setting, the low and high range sound levels increase, making the sounds clearer.

⑥ POWER (RECEIVER) button

Use to switch the RECEIVER power to ON or STANDBY.

⑦ POWER (CD/LD, DVD/TV) buttons

(When the MODE switch is set to I.)
Use to turn ON/OFF the CD, DVD power.
(When the MODE switch is set to II.)
Use to turn ON/OFF the LD, TV power.

⑧ MODE switch

Use to switch the remote control unit modes.

⑨ TV FUNCTION button

Use to switch the TV function.

⑩ MUTING button

Turns ON when the volume is muted.

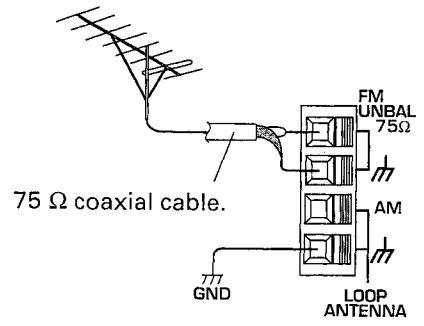
⑪ MASTER VOLUME –/+ buttons

Use to adjust the volume.

CONNECTING DEVICES

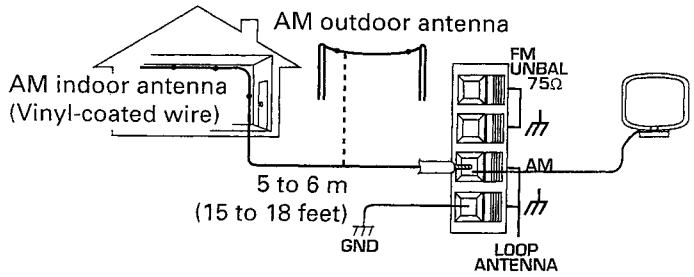
When connecting or changing equipment, be sure to turn OFF the POWER switch, and disconnect the power cord from the wall outlet.

■ For better reception of signals, use the FM external antenna.

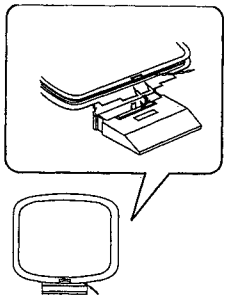


■ When AM broadcast reception is poor

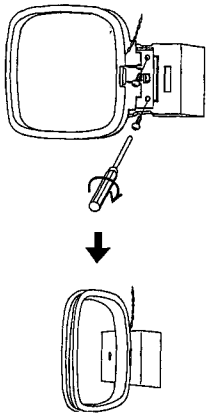
Connect a 5 to 6 meter long vinyl-coated wire to the AM antenna. If possible draw horizontally outdoors to achieve better reception.



■ Assembling the AM loop antenna



■ When attached on a wall, etc.

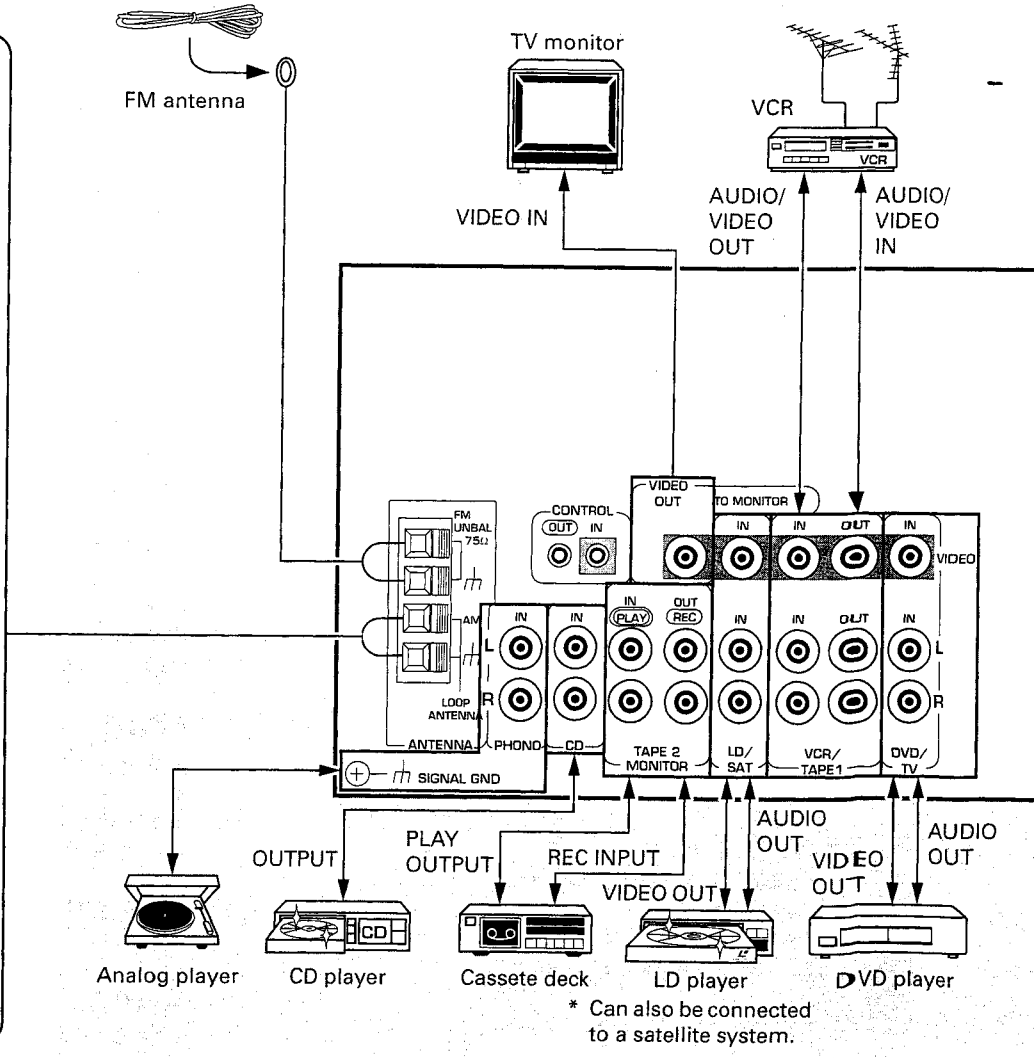


Face towards the direction with the best reception.

Stretch out fully and secure onto the wall using pins.

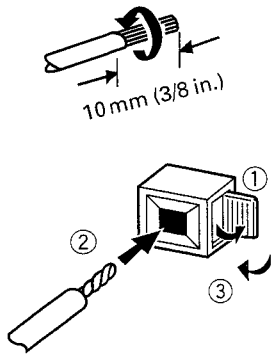
FM antenna

* Can also be connected to a cassette deck.

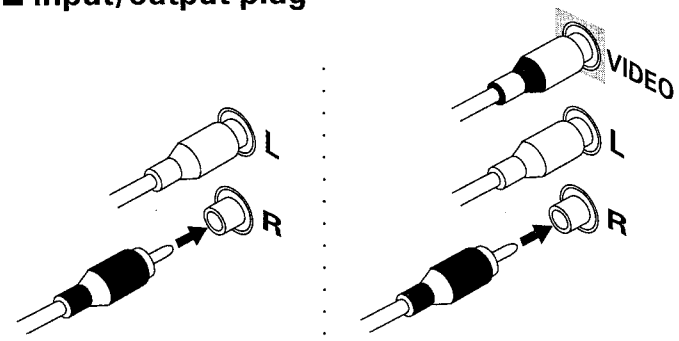


* Can also be connected to a satellite system.

■ Antenna terminal

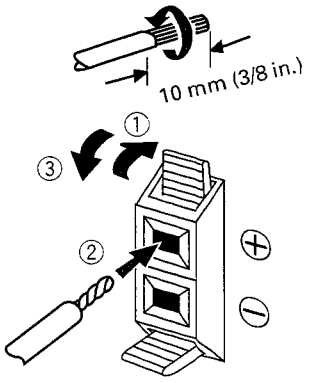


■ Input/output plug

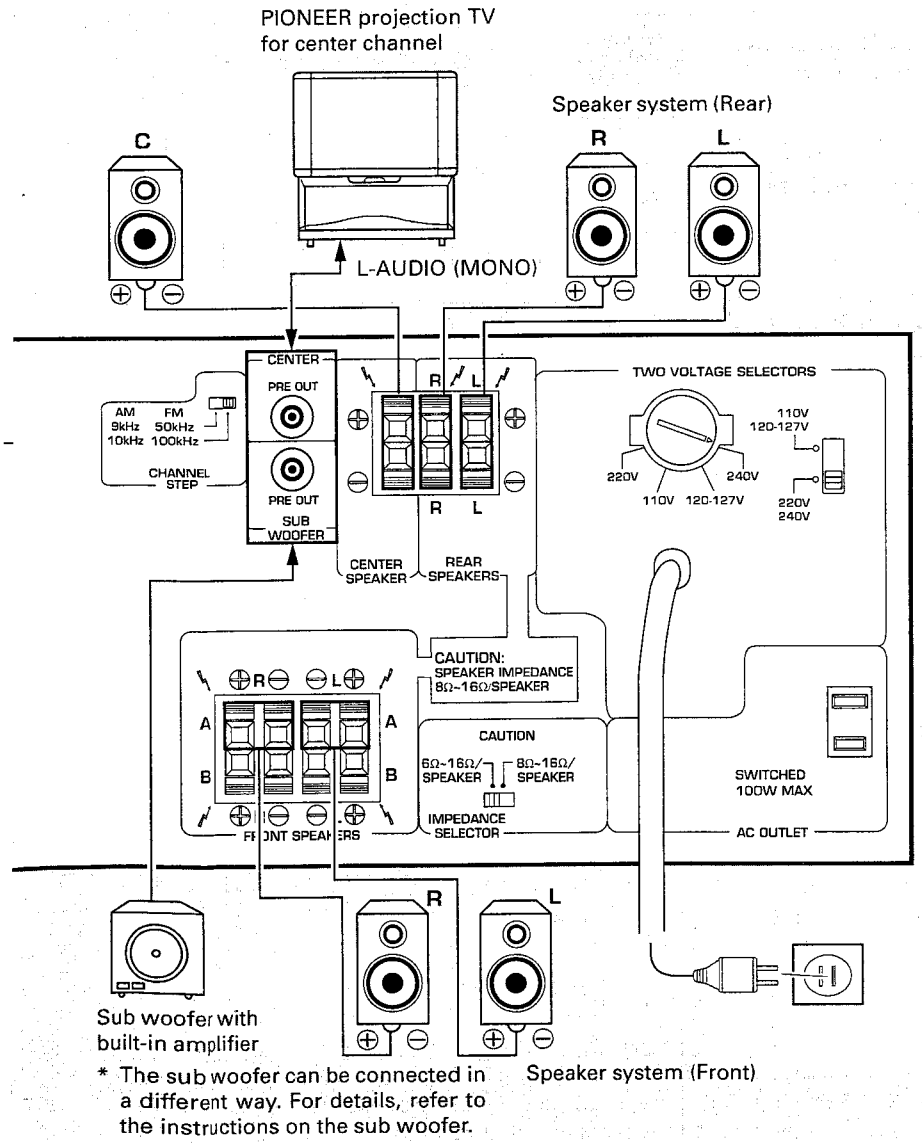


Connect the white plug to L, red plug to R, and yellow plug to VIDEO. Be sure to insert completely.

■ Speakers terminal



- The size of characters and terminal positions in the figures may differ from those on the actual product.
- The figures show the multi voltage model.



* The sub woofer can be connected in a different way. For details, refer to the instructions on the sub woofer.

AC OUTLET [SWITCHED 100 W (0.8 A) MAX]

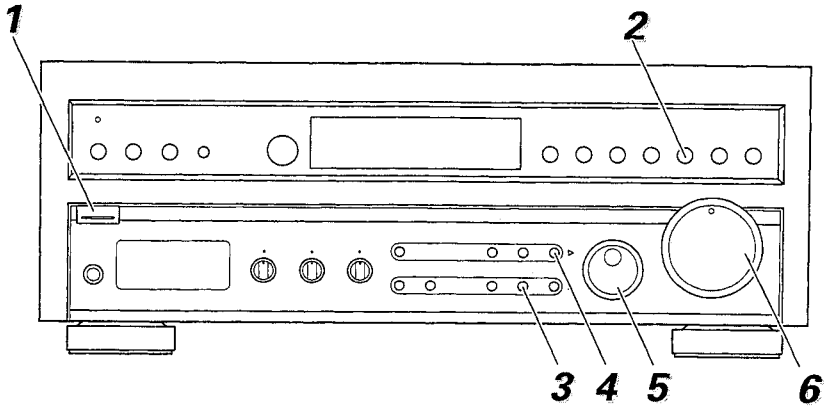
Power supplied through this outlet is turned on and off by the receiver's POWER switch.
Total electrical power consumption of connected equipment should not exceed 100 W (0.8 A).

memo

Use nominal impedances such as 6 Ω to 16 Ω or 8 Ω to 16 Ω for the speaker system. When using 6 Ω to 16 Ω, switch the IMPEDANCE SELECTOR to 6 Ω to 16 Ω.

3. BASIC OPERATIONS

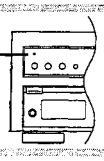
LISTENING TO FM/AM BROADCASTS (Main unit only)



memo Turn OFF TAPE 2 MONITOR (The indicator goes off).

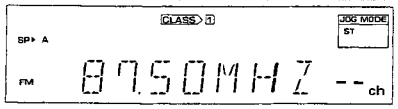
1. **Turn ON the power of the receiver.**

→ STANDBY indicator goes off.



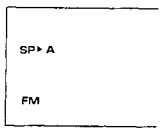
2. **Set the TUNER function.**

→



3. **Select the band (FM or AM).**

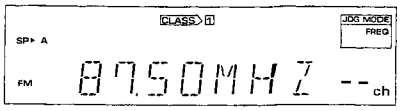
→



FM ↔ AM

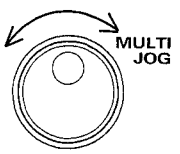
4. **Select the frequency mode.**

→

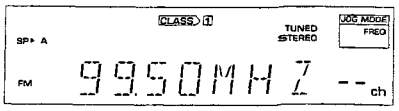


The FREQ indicator lights.

5. **Select the broadcast station.**

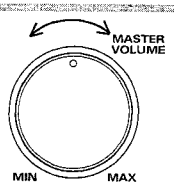


→



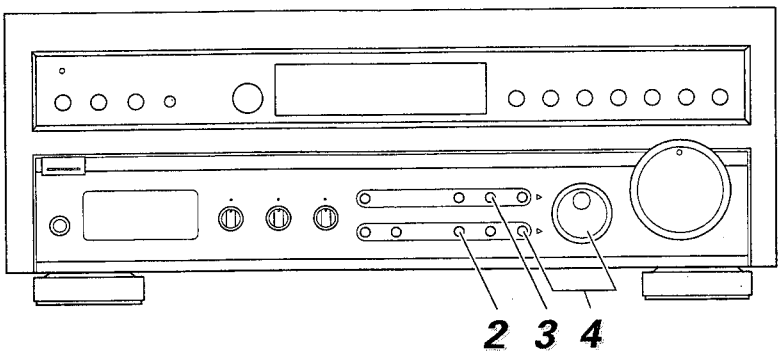
The TUNED indicator lights when broadcast is received.

6. **Adjust the volume.**



memo The TUNED indicator will not light when a broadcast station is too far away or when the broadcasting signal is weak.

Memorizing Desired Stations (Main unit only)

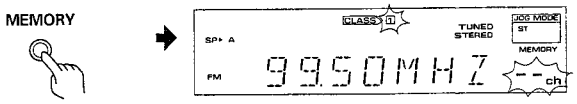


memo

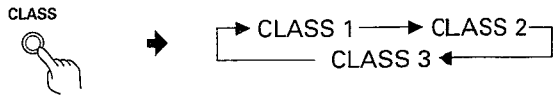
- The frequency received and MPX MODE (FM only) can be memorized.
- Up to 10 stations can be memorized in each of three classes.

1. Receive the desired station. ➡ Refer to "Listening to FM/AM Stations" (P.14).

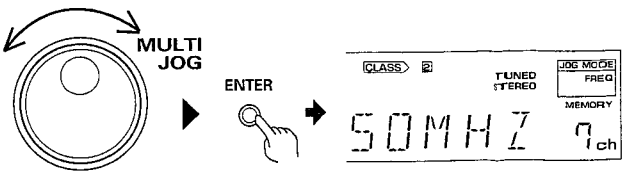
2. Set the MEMORY mode.



3. Select the desired class number.



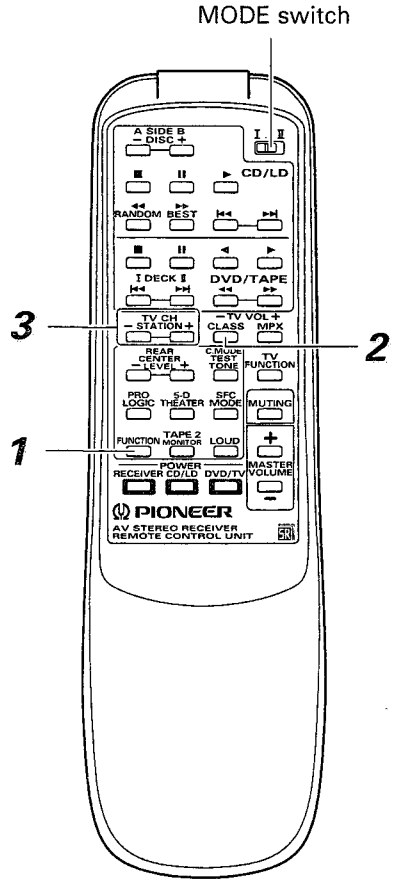
4. Select the desired station number.



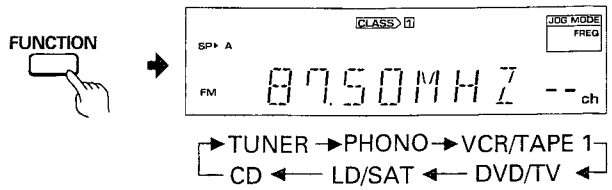
Rotate the MULTI JOG to select the station number, and press the ENTER button to memorize the selection. (Even if ENTER is not pressed, the selection will be automatically memorized in 5 seconds.)

Repeat steps 1 to 4 to memorize up to 30 stations.

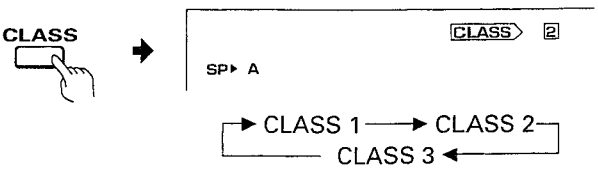
Listening to Memorized Stations



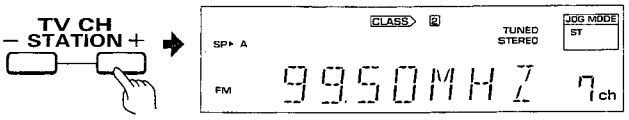
1. **Set the TUNER functions.**



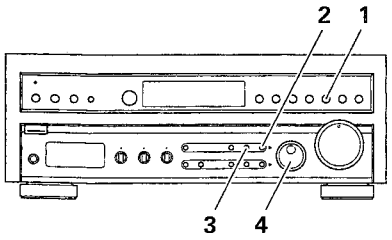
2. **Select the CLASS number in which the desired station is memorized.**
(Before operating, switch the MODE switch to I.)



3. **Select the station number of the desired station.**



Example:
When FM99.50 MHz has been memorized in channel 7 of CLASS 2.

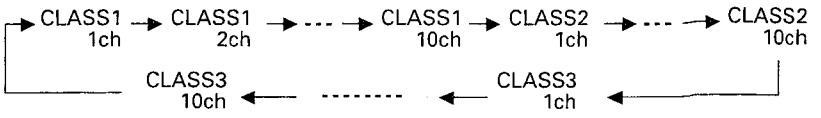


■ Operating with the main unit

1. **Press the TUNER button.**
2. **Press the SELECT button to set the station mode.**
   The ST indicator lights.
3. **Press the CLASS button, and select the CLASS number in which the desired station has been memorized.**
4. **Rotate the MULTI-JOG, and select the desired station number which has been memorized.**

memo

- When the power cord of the unit is disconnected from the wall outlet for several days, the stations memorized will be erased.
- When selecting the station number with the STATION + / – buttons or MULTI JOG, the stations will switch as follows.

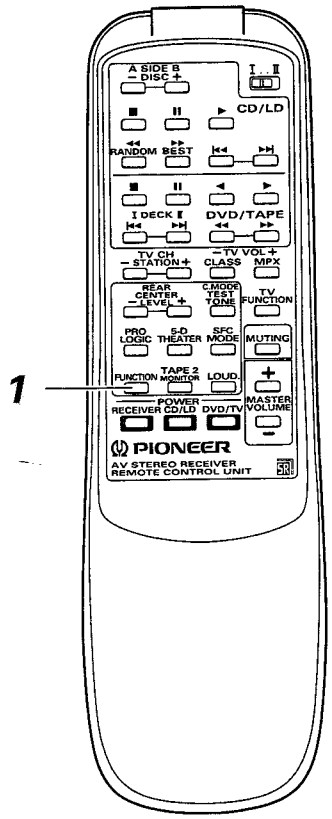


■ Last Station Memory

By turning ON the power and setting TUNER, the station set before the power was turned OFF will be received.

RECORDING

Recording with TAPE 1 or TAPE 2



memo
- Turn OFF TAPE 2 MONITOR when recording with TAPE 1.
- Turn ON the power of all equipment to be used.

1. Select the source to be recorded.

FUNCTION

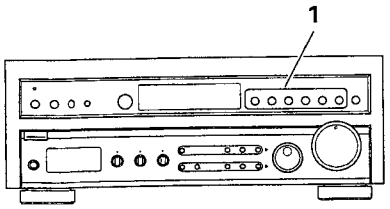
TUNER → PHONO → VCR/TAPE 1 → DVD/TV → LD/SAT → CD

2. Start recording with TAPE 1 or TAPE 2.

3. Play back the source to be recorded.

■ Operating with the main unit

1. Select the source to be recorded using the FUNCTION button.
2. Start recording with TAPE 1 or TAPE 2.
3. Play back the source to be recorded.

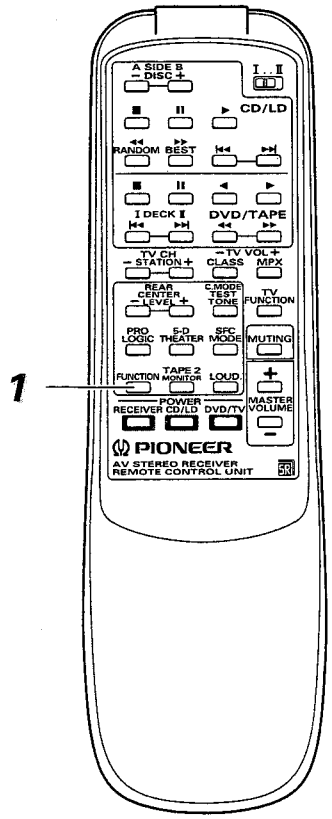


memo
- The VCR/TAPE 1 sounds cannot be recorded with TAPE 1.
- The volume, tone, balance and surround setting of this unit have no effect on the recording signal.

■ Recording Monitor

When recording with TAPE 2, if the recording device connected has a recording monitor function, turning ON the TAPE 2 MONITOR button will enable recording to be carried out simultaneously with playback monitoring (the TAPE 2 indicator lights).

Recording with a VCR



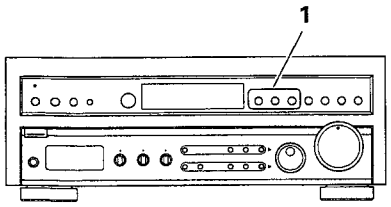
1. **Select the source to be recorded.**

FUNCTION → TUNER → PHONO → VCR/TAPE 1 → CD ← LD/SAT ← DVD/TV ←

2. **Start recording with a VCR.**

3. **Play back the source to be recorded.**

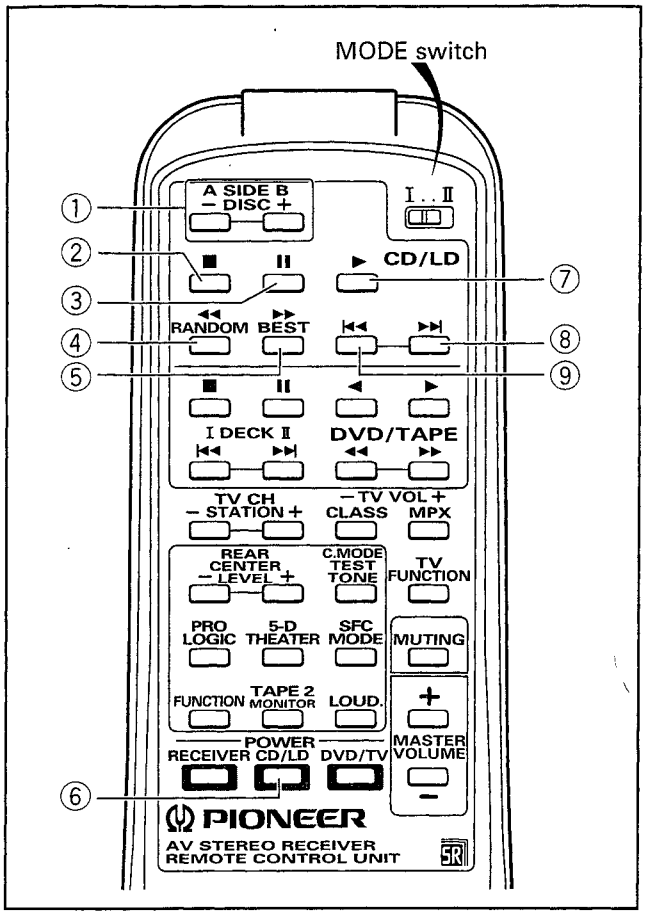
memo The signal from VCR/TAPE 1 cannot be recorded.



■ Operating with the main unit

1. **Select the source to be recorded using the FUNCTION button.**
2. **Start recording with VCR.**
3. **Play back the source to be recorded.**

memo The volume, tone, balance, and surround setting of this unit have no effect during recording signal.



OPERATING OTHER COMPONENTS

CD PLAYER operation

Switch the function to CD, switch the MODE switch to I, and operate as desired using the following buttons.

① DISC –/+
Use to select the disc for CD players which can play several discs.

② ■
Stops playback.

③ II
Use to pause playback.

④ RANDOM
Plays the songs recorded on the disc randomly.

⑤ BEST
Use to select and listen to only the desired songs. When pressed at the desired song while playing back CDs, the unit will memorize the track number, and play only the memorized songs later.

⑥ POWER CD
Use to turn ON/OFF the CD player.

⑦ ►
Starts playback.

⑧ ►►|
Pressing and releasing this button immediately advances playback to the beginning of the next track. Pressing it continuously advances playback to the beginning of a future track.

⑨ |◄◄
Pressing and releasing this button immediately returns playback to the beginning of the track currently being played. Pressing it continuously returns playback to the beginning of a previous track.

LD PLAYER operation

Switch the function to LD, switch the MODE switch to II, and operate as desired using the following buttons.

① SIDE A/B
Switches between sides A and B of the disc.

② ■
Pressing this button during playback will stop the unit. (With some LD players, the disc table may come out if pressed during stop.)

③ II
Use to pause. (In some players, pressing this button may set still pictures.)

④ ◄◄
Continuously pressing this button will start fast rewind playback.

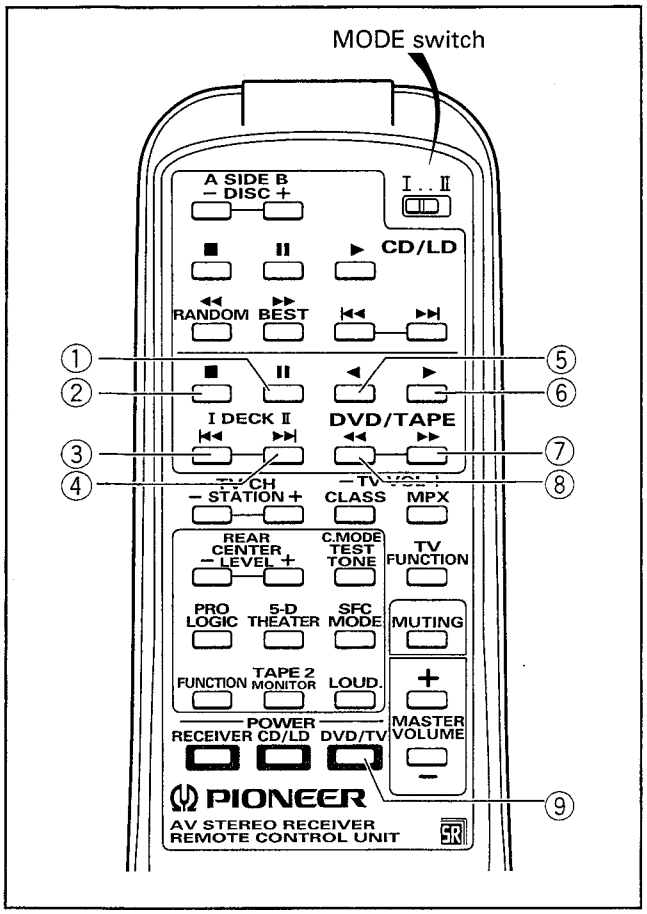
⑤ ►►
Continuously pressing this button will start fast forward playback.

⑥ POWER LD
Use to turn ON/OFF the LD player.

⑦ ►
Starts playback.

⑧ ►►|
Pressing and releasing this button immediately advances playback to the beginning of the next chapter (track). Pressing it continuously advances playback to the beginning of a future chapter (track).

⑨ |◄◄
Pressing and releasing this button immediately returns playback to the beginning of the chapter (track) currently being played. Pressing it continuously returns playback to the beginning of a previous chapter (track).



DVD PLAYER operation

Switch the function to DVD/TV, switch the MODE switch to I, and operate as desired using the following buttons.

① **II**

Use to pause. (In some players, pressing this button may set still pictures.)

② **■**

Pressing this button during playback will stop the unit.

③ **|◄◄**

Pressing and releasing this button immediately returns playback to the beginning of the chapter (track) currently being played. Pressing it continuously returns playback to the beginning of a previous chapter (track).

④ **►►|**

Pressing and releasing this button immediately advances playback to the beginning of the next chapter (track). Pressing it continuously advances playback to the beginning of a future chapter (track).

⑤ **►**

Starts playback.

⑥ **►►**

Pressing this button continuously will start fast forward playback.

⑦ **◄◄**

Continuously pressing this button will start fast rewind playback.

⑧ **POWER DVD**

Use to turn ON/OFF the DVD player.

CASSETTE DECK operation

Switch the function to VCR/TAPE 1 or TAPE 2 MONITOR, switch the MODE switch to II, and operate as desired using the following buttons.
When operating a single deck, press the DECK II button first.

① **II**

Pauses playback and recording.

② **■**

Stops tape running.

③ **DECK I**

Press to operate DECK I for double decks.

④ **DECK II**

Press to operate DECK II for double decks.

⑤ **◄**

Plays in the direction of the arrow.

⑥ **►**

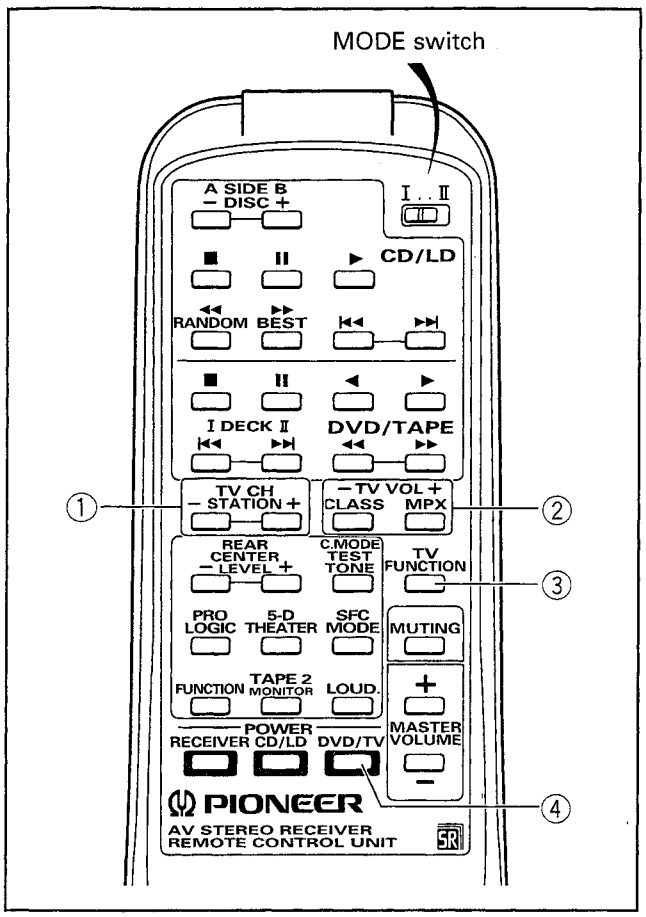
Plays in the direction of the arrow.

⑦ **►►**

Fast forwards the tape. Pressing this button during playback will start fast forward playback.

⑧ **◄◄**

Rewinds the tape. Pressing this button during playback will start fast rewind playback.



TV operation

Switch the function to DVD/TV, switch the MODE switch to II, and operate as desired using the following buttons.

① TV CH –/+
Use to select a TV broadcast channel.

② TV VOL –/+
Use to adjust the TV volume.

③ TV FUNCTION
Use to select the TV input.

④ POWER TV
Use to turn ON/OFF the TV.

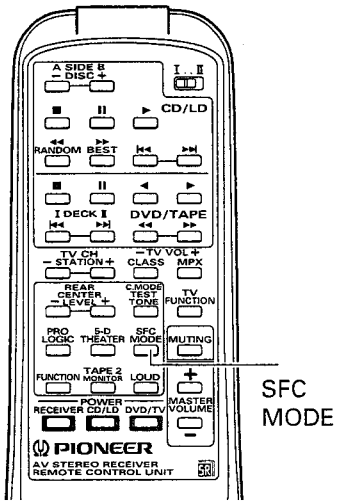
memo

If your unit does not have a certain function, it will not respond when the button of that function on the remote control unit is pressed.

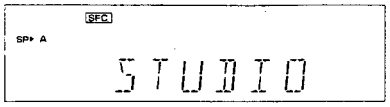
4. VARIOUS OPERATIONS

ENJOYING SURROUND EFFECTS

Selecting the SFC MODE

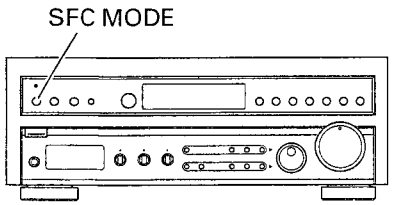


Select the sound effects.



Refer to page 26 for the characteristics of the surround effects.

STUDIO → ARENA → SFC OFF → STUDIO

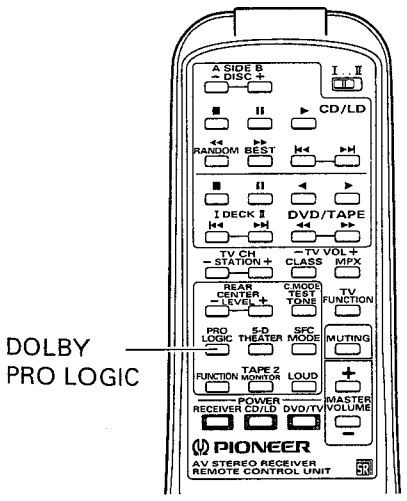


■ Operating with the main unit

Press the SFC MODE button.
Each time it is pressed, the surround effects change as follows.

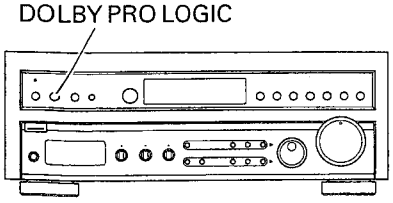
STUDIO → ARENA → SFC OFF → STUDIO

Switching the Dolby Pro Logic



Switch Dolby Pro Logic.

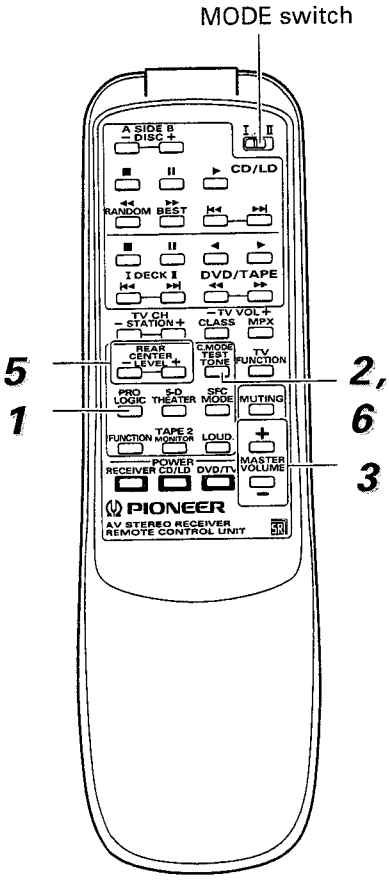
Each time it is pressed, the mode is turned ON/OFF.



■ Operating with the main unit

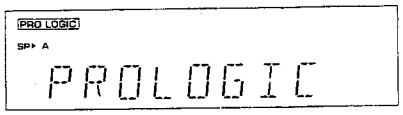
Press the DOLBY PRO LOGIC button.
Dolby Pro Logic is turned ON/OFF each time it is pressed.

Enjoying Movie and Music sources in surround mode



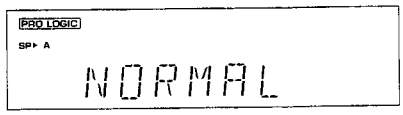
1. **Select Dolby Pro Logic and SFC mode.**

PRO LOGIC SFC MODE



2. **Select the center mode.**
(Before operating, switch MODE switch to II.)

C.MODE TEST TONE



Refer to page 26 for the characteristics of the center modes.

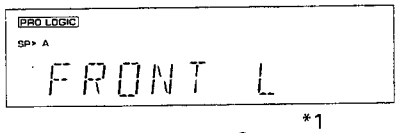
NORMAL → WIDE → PHANTOM ← 3CH LOGIC

3. **Adjust to the desired volume.**

MASTER VOLUME (+ / −)

4. **Set the test tone.**
(Before operating, switch MODE switch to I.)

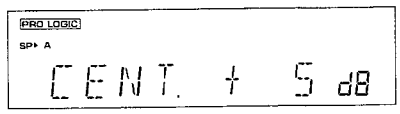
C.MODE TEST TONE



Front L → Center → Front R → Rear *1 *2

5. **Adjust the center level and rear level so that the test tone volume output from each speaker is the same.**

REAR CENTER LEVEL (− / +)



Level can be set for each surround mode.

6. **Turn OFF the test tone.**

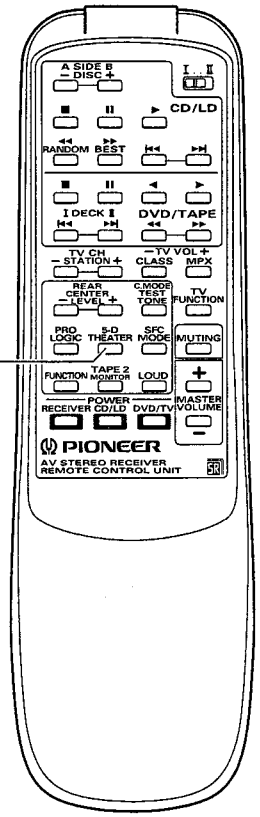
C.MODE TEST TONE

7. **Play the desired source.**

memo

*1 When selecting PHANTOM in the center mode, no test tone is output from the center speaker.
*2 When 3CH LOGIC is selected in the center mode, no test tone from the rear speaker is output.

Enjoying 5-D THEATER



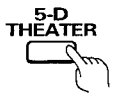
The 5-D THEATER function provides clear dynamic sound effects by outputting audio signals through the rear channel to simulate stereo sound.
Select from the two modes according to the source.

①5-D PRO LOGIC
Suitable for DOLBY PRO LOGIC surround sources with lots of movement such as action movies. It provides sounds with more speed.

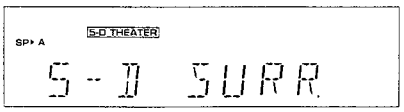
②5-D SURROUND
Suitable for stereo sources (CD, etc.)
Mixing the surround effects with the 5-D THEATER effects will provide sound with depth.

memo Effects may be less in scenes where sounds do not shift, between L and R channels.

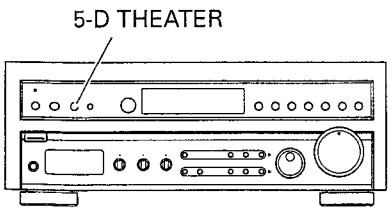
Select the 5-D THEATER mode.



→ 5-D PRO LOGIC → 5-D SURR → SURR. OFF →



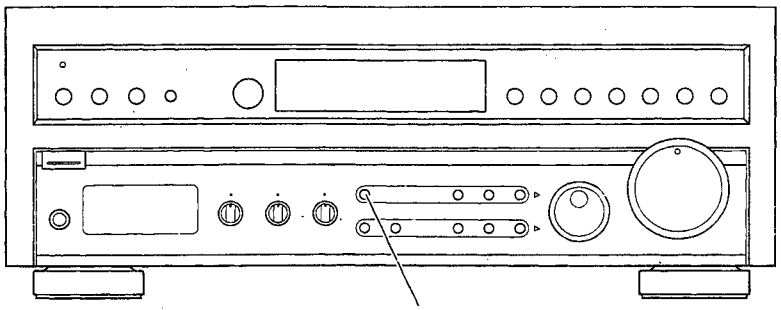
■ Operating with the main unit



Press the 5-D THEATER button.
The mode is switched as follows with each press.

→ 5-D PRO LOGIC → 5-D SURR → SURR. OFF →

RETURNING TO BROADCAST RECEPTION MODE (RETURN BUTTON)



If no sound is produced while this unit is operating or when help is required, press this button to return to the AM/FM broadcast reception mode.

To return to the AM/FM broadcast reception mode.

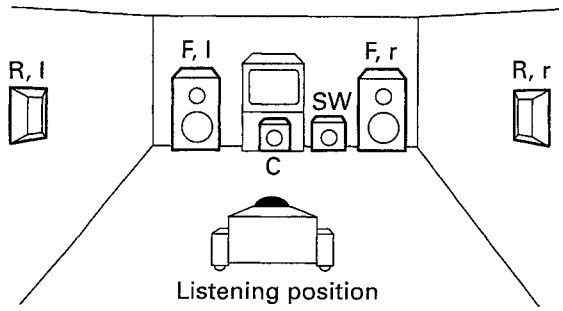
Settings will be as follows.
- TAPE 2 MONITOR: OFF
- MUTING: OFF
- Function: TUNER
  The station received the last time will be received. If the station cannot be received, auto tuning will be performed to find a receivable station.
- If the SURROUND MODE, LOUDNESS are ON, they will be set to OFF.
  These settings are memorized for each function, settings of functions other than TUNER will be maintained.
- SPEAKERS A, B: Only A is ON.

5. OTHER

SURROUND

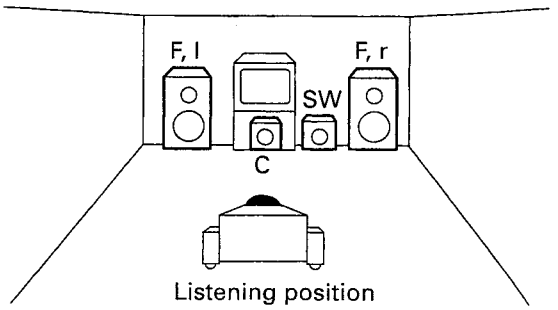
Dolby Pro Logic Surround

Set to this position for video and music sources (especially sources with DOLBY SURROUND marks).
Dolby Pro Logic Surround continuously detects the size and direction of signals.
As a result, the position of the sound source becomes clear, enabling reproduction of natural sound flow.



Dolby 3CH Logic

Same system as the Dolby Pro Logic Surround except that REAR speakers are not installed. REAR speaker signals are played back by the FRONT speakers, enabling better reproduction of surround effects and depth than with normal stereo playback.



* In the above figure, F stands for FRONT speakers, R for REAR speakers, C for CENTER speakers, SW for sub woofer, r for right, and l for left.

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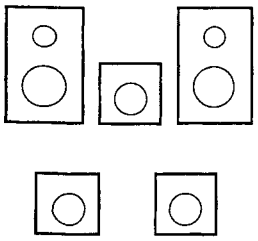
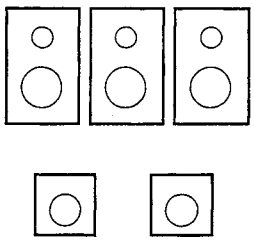
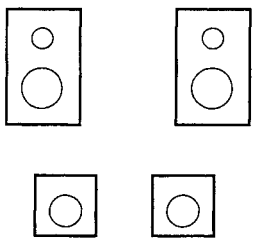
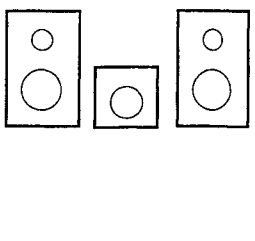
■ Selecting the center mode

When Dolby Pro-Logic is ON, pressing the CENTER MODE button will switch the mode as follows.

NORMAL → WIDE → PHANTOM → 3CH LOGIC → NORMAL

NORMAL	WIDE	PHANTOM	3ch LOGIC
Plays back middle and high range sounds from the CENTER speaker. Sounds are at the fixed position. The bass from the center channel is played back by the FRONT speakers.	Using the same speakers as the FRONT speakers for the CENTER speaker enables sounds from bass to treble to be played back more naturally.	The center channel sounds are played back between the L and R FRONT speakers.	The surround channel sounds and center channel bass sounds are played back between the L and R FRONT speakers.
			

■ SFC modes

STUDIO	Simulates the acoustic effects of recording studios. Best suited for jazz and combo sources.
ARENA	Simulates the same effects as live performance sources. Best suited for rock, etc.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
The power does not turn ON.	• The power plug is disconnected from the outlet. • The cause may lie in the protection circuit.	• Insert into the wall outlet. • Disconnect the power plug from the outlet, and insert again.
The unit does not work even when the buttons are pressed.	• Due to effects of static electricity when the air is dry.	• Disconnect the power plug from the outlet, and insert again.
No sound is output when a function is set.	• Not properly connected. • Sound is muted. • The volume is turned down. • The TAPE 2 MONITOR is ON. • The speaker switch is OFF.	• Refer to pages 12 to 13 and connect again. • Press the MUTING button on the remote control unit. • Adjust MASTER VOLUME. • Press the TAPE 2 MONITOR button. • Press the SPEAKER button of terminal (A/B) connected to the speakers.
No image is output when a function is set.	• Not properly connected. • The input source is not properly selected.	• Refer to pages 12 to 13, and connect again. • Press the correct button.
Considerable noise in radio broadcasts	• Not received at proper frequency. • The antenna is not connected.	• Receive the correct frequency. • Connect the antenna properly. (P. 12)
	[FM broadcast reception] • The FM antenna is not stretched out, and faces an inappropriate direction. • Weak radio waves.	• Stretch out the antenna and secure it to a wall while selecting the direction and position with the best reception state. • Change the FM antenna to an outdoor antenna of multiple elements. (P. 12)
	[AM broadcast reception] • The AM antenna faces inappropriate direction. • Weak radio waves. • Affected by other equipment. (Fluorescent lamp, motor, etc.)	• Select the direction and position with the best reception state. • Connect the AM outdoor antenna.(P. 12) • Turn off the equipment which cause noise or move them away from the unit. • Distance the antenna from the equipment which cause noise.
No sound from rear or center speaker	• Rear or center level is turned down. • The rear or center speaker is disconnected.	• Raise the level. • Connect (P. 12, 13)
Cannot be remote controlled	• The remote control unit batteries have worn out. • Too great of a distance. Bad angle. • There is an obstacle blocking signals in between. • Strong light such as fluorescent light is shining onto the unit's remote sensor.	• Replace the batteries. (P. 7) • Operate within 7m and 30 deg. from the left and right of the remote sensor. • Remove the obstacle or operate from somewhere else. • Avoid direct exposure of the remote sensor to the light.

If the unit does not operate normally due to external effects such as static electricity, disconnect the power plug from the outlet and insert again to return to the normal operating conditions.

SPECIFICATIONS

Amplifier section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.09 % total harmonic distortion (front).**

[Multi-voltage model only]
Continuous Power Output (DIN)
Front (1kHz, T.H.D. 1 %, 8 Ω) ..... 110 W + 110 W

Continuous Power Output
Front ..... 100 W + 100 W (1kHz, 0.8 %, 8 Ω)
Center ..... 100 W (1kHz, 0.8 %, 8 Ω)
Rear ..... 100 W + 100 W (1kHz, 0.8 %, 8 Ω)

Input (Sensitivity/Impedance)
PHONO MM ..... 2.8 mV/47 kΩ
CD, VCR/TAPE 1, TAPE 2, DVD/TV, LD/SAT
..... 200 mV/47 kΩ
Phono Overload level (T.H.D. 0.1 %, 1kHz)
PHONO MM ..... 100 mV
Frequency Response
PHONO MM ..... 20 Hz to 20,000 Hz ± 0.3 dB
CD, VCR/TAPE 1, TAPE 2, DVD/TV, LD/SAT
..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB
Output (Level/Impedance)
VCR/TAPE 1 REC, TAPE 2 REC ..... 200 mV/2.2 kΩ
VIDEO OUT ..... 200 mV/2.2 kΩ
Tone Control
BASS ..... ± 9 dB (150 Hz)
TREBLE ..... ± 9 dB (10 kHz)
LOUDNESS ..... + 8 dB/+ 6 dB (100 Hz/10 kHz)
Signal-to-Noise Ratio (IHF, short circuited, A network)
PHONO MM ..... 72 dB
CD, VCR/TAPE 1, TAPE 2, DVD/TV, LD/SAT ..... 96 dB
Signal-to Noise Ratio [EIA, at 1 W (1 kHz)]
PHONO MM ..... 75 dB
CD, VCR/TAPE 1, TAPE 2, DVD/TV, LD/SAT ..... 79 dB

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*
** *Measured by Audio Spectrum Analyzer.*

VIDEO Section

Input (Sensitivity/Impedance)
VCR, DVD/TV, LD/SAT ..... 1 Vp-p/75 Ω
Output (Level/Impedance)
VCR ..... 1 Vp-p/75 Ω
Frequency Response
VCR, DVD/TV, LD/SAT → MONITOR
..... 5 Hz to 7 MHz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio ..... 55 dB
Cross Talk ..... 55 dB

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... Mono:11.2 dBf, IHF (1.0 μV/75 Ω)
50 dB Quieting Sensitivity ..... Mono: 16.8 dBf
Stereo: 38.6 dBf
Signal-to-Noise Ratio ..... Mono: 73 dB (at 85 dBf)
Stereo: 70 dB (at 85 dBf)
Distortion ..... Stereo: 0.5 % (1 kHz)
Alternate Channel Selectivity ..... 60 dB (400 kHz)
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz (±1) dB
Antenna Input ..... 75 Ω unbalanced

AM Tuner Section

Frequency Range ..... 531 kHz to 1,602 kHz (9 kHz step)
530 kHz to 1,700 kHz (10 kHz step)
Sensitivity (IHF, Loop antenna) ..... 350 μV/m
Selectivity ..... 25 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop antenna

Miscellaneous

Power Requirements
U.S. model ..... AC 120 V, 60 Hz
Multi-voltage model ... AC 110 V/120-127 V/220 V/ 240 V
(Switchable), 50/60 Hz
Power Consumption
U.S. model ..... 260 W, 360 VA
Multi-voltage model ..... 264 W
In Standby Condition ..... 7 W
AC Outlet
U.S. model
SWITCHED ..... 100 W (0.8 A) MAX
Multi-voltage model
SWITCHED ..... 100 W MAX
Dimensions ..... 420 (W) × 155 (H) × 374 (D) mm
16-9/16 (W) × 6-1/8 (H) × 14-3/4 (D) in
Weight (without package)
U.S. model ..... 9.1 kg (20 lb 1 oz)
Multi-voltage model ..... 9.2 kg (20 lb 5 oz)

Furnished Parts

FM Antenna 1
AM Loop Antenna 1
Dry Cell Batteries
[size "AA" (IEC R6)] 2
Remote Control Unit 1
Operating Instructions 1

NOTE:
Specifications and the design are subject to possible modifications without notice, due to improvements.

Dear Customer:

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion-and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:
- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:
- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

Decibel Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.

THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzene, insecticide sprays or other chemicals on or near this unit, since these will corrode surfaces.

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